REFERENCES

1. Morhardt RP: Handbook of Death—Mechanisms, Causes, and Certification. South Pasadena, Calif, RP Morhardt, 1946

2. Klatt EC, Noguchi TT: Death certification—Purposes, procedures, and pitfalls. West J Med 1989; 151:345-357

* * *

Drs Klatt and Noguchi Respond

To THE EDITOR: We use only those references that can be personally reviewed by us. The reference cited by Dr Sarkin was not available to us. There are undoubtedly many other local publications on this subject available to physicians. We should like to stress, however, that one of the best reference sources for information on death certification is still the local registrar or recorder with whom these documents are filed. The registrar can assist physicians not only with proper terminology and wording but also with specific information regarding local statutes governing deaths that come under the jurisdiction of the medical examiner or coroner and with instructions for proper completion of demographic items.

EDWARD C. KLATT, MD
THOMAS T. NOGUCHI, MD
Dept of Laboratories and Pathology
LAC/USC Medical Center
General Hospital, Room 2520
1200 N State St
Los Angeles, CA 90033

Warfarin and Stroke

To THE EDITOR: In his editorial on managing cardiac emboli,[1] Dr Burke mentions that it is "unclear" whether long-term warfarin therapy will reduce the incidence of strokes occuring in the context of atrial fibrillation. He goes on to say that it may be indicated "only in certain groups" such as patients with cardiomyopathy and "would not appear to be necessary" in persons younger than 60 years with lone atrial fibrillation.

These findings are not in accord with a well done, randomized, double-blind study comparing warfarin to aspirin or placebo. A statistically significant decrease in the incidence of stroke was shown after two years in patients on warfarin but not in those in the other groups. Some of these patients were as young as 41 years.[2]

Any review of atrial fibrillation and stroke should at least mention this study.

TOM BOHR, MD
Staff Neurologist
The Permanente Medical Group
260 International Circle
San Jose, CA 95119-1197

REFERENCES

1. Burke JF: The role of echocardiography in managing cardiac emboli. West J Med 1989; 151:197-198

2. Petersen P, Boysen G, Godtfredsen J, et al: Placebo-controlled, randomised trial of warfarin and aspirin for prevention of thromboembolic complications in chronic atrial fibrillation. Lancet 1989; 1:175-179

* * *

Dr Burke Responds

To THE EDITOR: The trial referred to by Dr Bohr is the first placebo-controlled, randomized trial comparing the effects of warfarin and aspirin-placebo in the prevention of thromboembolic complications in chronic atrial fibrillation.[1] This article, published in January 1989, describes a landmark study. Unfortunately, publication deadline required my composition of my editorial before publication of this article.

This trial included 335 or 336 patients in each group. The results were impressive: 21 patients in each of the aspirin and placebo groups had embolic events compared with only 5 events in the warfarin group. Most of these five events occurred at "subtherapeutic" prothrombin levels or when the patients had to stop warfarin therapy. This study would appear to sway the preponderance of evidence in favor of warfarin treatment in patients with chronic atrial fibrillation.

Several limitations exist with the study by Petersen and co-workers that warrant further evaluation and investigation before we subject all patients with atrial fibrillation to long-term warfarin therapy. Although the Methods section states echocardiograms were done, the results of these are never mentioned in the Results or Discussion. Left atrial size is not discussed except in the Methods. Many causes for atrial fibrillation are not clearly defined. No mention is made of hypertrophic or dilated cardiomyopathies, two groups with high embolic rates when associated with atrial fibrillation. Although certain subgroups are listed, such as those with thyrotoxicosis and patients with a history of heart failure, the number of embolic events is never broken down into these individual groups in an attempt to define if only one subgroup would warrant the warfarin therapy. The end point of embolic events includes acute stroke. This was a clinical diagnosis in some cases because a "computed tomography (CT) scan was done when possible." The follow-up was limited to two years.

The warfarin treatment was not innocuous. A total of 21 patients had hemorrhage requiring drug withdrawal. Another patient had a fatal cerebral hemorrhage. Only two patients in the aspirin group and none in the placebo group had significant bleeding. Of the patients randomly selected for the warfarin treatment, 38% withdrew from the drug trial before the two years of follow-up.

Finally, this trial presents some results in conflict with previous studies. Unlike the large Framingham study with 30 years of follow-up,[2] this study did not show a correlation between age and the incidence of embolic events. The article by Petersen and colleagues does not state the mean period of follow-up. Assuming a maximal two-year follow-up on patients, the placebo and angina groups had an embolic event rate of 3.13 per 100 patient years. This is nearly six times the embolic rate of 0.55 noted in the large cohort of patients with lone atrial fibrillation that were followed by the Mayo Clinic.[3] Presumably the group of patients enrolled into the study of Petersen and co-workers included subgroups with a higher embolic risk than the subgroup of lone atrial fibrillation.

In conclusion, the publication this year of this randomized trial gives further impetus to provide anticoagulation therapy for our patients with chronic atrial fibrillation. Because of the concerns listed here, further evaluation of the results of this trial and further confirmatory trials are needed before we subject all patients with atrial fibrillation to long-term warfarin therapy.

JAMES F. BURKE, MD
Kelly Cardiovascular Group
356 Lankenau Medical Bldg, East
Lancaster Ave at City Line
Philadelphia, PA 19151

REFERENCES

1. Petersen P, Boysen G, Godtfredsen J, et al: Placebo-controlled, randomised trial of warfarin and aspirin for prevention of thromboembolic complications in chronic atrial fibrillation. Lancet 1989; 1:175-179

2. Kannel WB, Abbott RD, Savage DD, et al: Epidemiologic features of chronic atrial fibrillation: The Framingham study. N Engl J Med 1982; 306:1018-1022

3. Kopecky SL, Gersh BJ, McGoon MD, et al: The natural history of lone atrial fibrillation—A population-based study over three decades. N Engl J Med 1987; 317:669-674